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# Understanding the Value of Friendships: Exploring the Different Characteristics of Virtual World Friendships Compared to Real World Friendships

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Understanding the Value of Friendships: Exploring  
the Different Characteristics of Virtual  
World Friendships Compared to  
Real World Friendships

A Thesis Presented to the Graduate Faculty  
of Fort Hays State University in  
Partial Fulfillment of the Requirements for  
the Degree of Master of Science

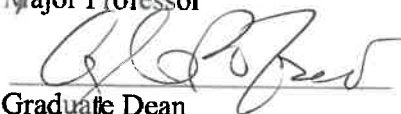
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## ABSTRACT

Research on video games, social media, and computer games has focused on specific social characteristics such as violence, communication, and social isolation. Most aspects of virtual world gaming and online relationships are considered inferior, if not damaging, to those who spend time on these platforms. Virtual relationships are often considered secondary to traditional relationships. Such relationships are seen as replacements for traditional friendships, leading to research focusing on replacement rather than value. Little research focuses on how a virtual world friendship compares to a traditional friendship and the value it may serve to individuals in the relationship. The present study uses an Aristotelian definition of friendship to explore the differences in characteristics between virtual world friendships and traditional friendships to determine if virtual world relationships can have the same value as traditional ones. Friendship characteristics of mutual well-being, self-expression, and shared experiences were measured via an online survey that included 223 participants from a midwestern university and Amazon Mechanical Turk. Participants reporting for traditional friendships indicated higher levels of ego support, self-affirmation, mutual well-being, satisfaction, and self-disclosure demonstrating deeper levels of friendship, however, personalized interest and concern was not found to differ between friendship types. Furthermore, duration of friendships was found to be positively related to self-disclosure and negatively related to measures of tension. These findings demonstrate that although traditional friendships and virtual friendships share common characteristics, traditional friendships reach a deeper level of friendship than virtual world friendships.

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## **Introduction**

Technology is changing the ways humans work, learn, and communicate. Public schools have implemented laptops and tablets in their systems, and individuals can now work remotely or sell their goods online. Family members can communicate instantly through their phones or computer screens, and social networking has made communicating ideas or opinions easy and fast. The new digital age allows people to access information and content globally, faster and easier than ever before. The consistency and availability of such communication inevitably promote cultural change (Vandewater & Lee, 2009). Technology reshapes human interaction with others, themselves, and nature. Technologies like artificial intelligence, cyberspace, virtual reality, and online gaming are shaping what humans do for work, play, and communication (Levin & Mamlock, 2021). Technological advances have changed socialization as people are able to get in touch from anywhere in the world faster than ever before.

The new digital age has positively and negatively impacted society regarding socialization. Studies vary on the internet's role in social well-being and connectedness and its effects on mental health. Although some studies show that internet use increases support systems, communication, and connectedness, other studies indicate increases in depression and loneliness (Martončík & Loksa, 2016; Selfhout et al., 2009). Virtual worlds and social media have changed the definition of positive communication, human interaction, and relationships. Specifically, the virtual world experience allows people to present themselves in a whole new way and meet people worldwide (Levin & Mamlock, 2021). Virtual worlds not only enhance and improve existing relationships, but they can also foster new friendships.

## **Virtual Worlds**

Virtual worlds allow players to connect worldwide and create new relationships as they would in real life. Numerous studies evaluate how gaming can increase or decrease violence, empathy, social skills, and communication. There is also research on how virtual worlds can help individuals with learning and intellectual abilities socially and cognitively, but little research investigates online friendships created during virtual world gaming (Du et al., 2016; Kowert & Emory Daniel, 2021; Markey et al., 2020; Martončík & Loksa, 2016). Psychology and philosophy acknowledge how relationships, such as friendships, affect individuals' physical and mental health. However, research is still unclear on how internet relationships, or in this case, virtual world relationships, compared to traditional relationships.

Unlike social media or video gaming, virtual world gaming systems have several social characteristics that allow for different forms of connections between their players. Though different studies examine the gamer experience and how gamers are impacted by playing violent or social games, this study focuses on the intimacy of online virtual world friendships compared to traditional, real-life relationships. As we slowly move into a society where cyberspace and virtual reality become a growing part of our society, evaluating virtual world friendships is just one step into understanding how the digital age has and will continue to affect human connection and social relationships. Acknowledging the existence and characteristics of virtual world friendships will lead to further understanding on how such relationships impact both physical and mental health.

### **MMORPGs & Virtual World Games**

Massively multiplayer online role-playing games (MMORPGs) are multiplayer universes that feature a wide range of fully detailed and advanced visual and auditory environments. In

these worlds, players create unique, individual avatars that allow players to express themselves in ways they may not feel comfortable doing in real life (Cole & Griffiths, 2007). In their study, they found that virtual worlds did not only allow freedom of expression, but players were more willing to express themselves online.

MMORPGs offer a space for social interaction where players build communities and create friendships. Each virtual world is unique in ways that require players to work together. Some researchers argue that these role-playing games do not connect people; instead, players are "alone together," whereas others note the collectivistic nature of MMORPGs as they fulfill communal tasks and build communities (Domahidi et al., 2014; Zhong, 2011).

It is essential to note which MMORPG is studied, as each virtual gaming world has its own goals and purpose. Virtual world games like *Sansar*, *Second Life*, and *IMVU* focus primarily on chatting and hanging out with friends. In contrast, others like *Worlds of Warcraft*, *Habbo*, or *Minecraft* include online chats and have systems and games created in the virtual world by the game creators or the players themselves (Du et al., 2016; Martončík & Loksa, 2016). Virtual worlds and virtual relationships by no means replace real-life friendship but it has been argued that such relationships lack fullness or reality in comparison (Levin & Mamlock, 2021; Sóraker, 2012). A comparison between traditional friendships and virtual world friendships is believed to be imperative as virtual worlds change the way people express themselves and interact with each other.

### **Friendships**

Humans are social beings that require different levels of socialization. Relationships affect not only physical health but happiness and mental well-being. Friendships are a known factor in longevity and positive mental health (Dunbar, 2018). Congruent with such belief,

philosopher Aristotle believed friendship to be vital to human happiness and well-being.

Aristotle understood that humans are social by nature and believed that friendships are necessary in life (Liu, 2010). He considered friendship to be a vital part of life, claiming that a life without friendship was unworthy of living (Bülow & Felix, 2016).

Unlike other definitions of friendships, Aristotle's theory of friendship specifies different characteristics and levels of friendship. Aristotle commonly used the term *reciprocal affection* to define friendship types in different contexts and situations, including familial relationships and everyday social interaction between citizens and coworkers (Fröding & Peterson, 2012). Modern thinkers define friendship similarly including any individual who is more than a casual stranger (Dunbar, 2018). Friendships can be with romantic partners or biological family members, as they too can be referred to as "best friends." Philosophically, friendships are believed to expand human life as they introduce new concerns, interests, experiences, and responsibilities (Liu, 2010).

### **Aristotelian Definition of Friendship**

Aristotle distinguished the three types of friendships in *Nichomachean ethics*, describing each type as serving a different function in personal growth. The three types, friendships of utility, friendships of pleasure, and virtuous friendships, have common characteristics with distinguished levels and personal impact. The different roles and features for the different types of friendship tend to overlap. The highest form known as virtuous friendship is essential to self-growth and progress (Fröding & Peterson, 2012; Kalliaranta, 2016). Wishing others well, reciprocal affection, and mutual connection are characteristics that define all three friendship types. In context, each type of friendship perceives these characteristics differently as they are valued for different reasons (Fortenbaugh, 1975).

The three friendship types tend to vary by personal background, personality, and age. Friendship of utility is a friendship based on advantages and attainment. Relationships are based primarily with the desire to receive any form of goods, such as money or a position at a job. Friendships based on pleasure are relationships that focus on each other's company. Here two individuals participate in pleasurable events or similar interests where they enjoy each other's company. Virtue friendship, the highest form of friendship, expands as variables of mutual concern, admiration, and shared values are added (Kaliarnta, 2016). This form of friendship, like the others, includes spending time together but intertwines related moral characteristics and mutual admiration. The lower friendships, friendships of utility and friendships of pleasure, are likely to end when they have served their purpose, but a virtuous friendship grows and remains (Bülow, 2016; Maher, 2012). Today, scholars continue to interpret and debate Aristotle's definition of the three kinds of friendship and their unique characteristics.

Friendships take different forms depending on the level of connection and manifestation of relationships. Maintenance of the relationship is also affected by these characteristics. Aristotle proposed that friendships are characterized by wishing well, reciprocal affection, and awareness. The capacity of each characteristic varies in different forms of friendships, however in the lesser friendships they may be absent altogether (Liu, 2010). A much-debated concept is the belief that wishing well (or goodwill) is a requirement of the three friendship types. A common argument to this is that no form of friendship exists without goodwill, levels of concern, and wishing well even if the characteristic is limited or conditional (Alpern, 1983).

Philosophically, an individual's self-perception and desire for relationships define the existence of friendships (Liu, 2010). In understanding the depths of friendship, it is crucial to understand that the individuals in the relationship impact the characteristics and existence of

friendships. So, although friendships are essential to human beings and to achieving prosperity in life, individuals may not desire such relationships due to the time and costs involved (Dunbar, 2018; Maher, 2012).

Aristotelian views on pleasure and enjoyment infer that without the perception of life from friends, people cannot perceive their own lives (Liu, 2010). Each form of friendship serves a purpose in identifying the self and, in some way, benefits the individual. Of the three, a virtuous friendship helps define a *good life*, creating a relationship of mutual admiration, loyalty, and moral goodness, encouraging self-exploration and self-growth (Fortenbaugh, 1975; Kaliarnta, 2016).

### **Friendship of Utility**

Friendship of utility is considered one of the lesser forms of friendship. A utility friendship's primary goal is oriented toward exchanges between two individuals. This form of friendship focuses on the mutual exchange. Particularly, both individuals expect to achieve or receive the equivalent of which they give. The relationship is solely based on giving and receiving. Wishing well is often highly influenced by the purpose of receiving something good or pleasurable (Alpern, 1983, Fortenbaugh, 1975).

A friendship based on utility does not necessarily lack goodwill but are sought for benefit. The purpose of the relationship is to extend the self rather than mutual growth and understanding. Often, there is no reason for relationships based on utility to find each other's company pleasant or useful (Pangle, 2002). This type of relationship is typically sought out for benefits of money, work promotion, or some form of self-advancement (Kaliartna, 2016).

Though individuals may desire noble friendships, they primarily choose to keep the relationship

based on personal advantage. Reciprocal affection and awareness are present enough for a bond to form indicating a level of trust and cooperation necessary for a relationship (Alpern, 1983).

An example often used to describe a friendship of utility is one of older adults who have close friendships that do not expand beyond utility but have been maintained for many years. They do not necessarily find those relationships pleasurable or life changing but maintain communication regardless (Fortenbaugh, 1975). Aristotle described this form of friendship between two tradesmen, in which goods like money, benefits, and trades of some form are exchanged. In contrast to other forms of friendship, friendship of utility does not require spending time together or sharing moral values (Pangle, 2002). Once the benefit aspect of the relationship ends, the friendship and connectivity created often ends altogether.

### **Friendship of Pleasure**

Much like friendship of utility, friendship of pleasure is goal oriented and ultimately fragile in nature. Once pleasure diminishes, the friendship does as well. Wishing well to one another may or may not be present in the relationship (Fortenbaugh, 1975). Unlike friendship of utility, reciprocal affection is more prominent as friends spend time together and enjoy each other's company. The connection between two individuals is due to mutual activity and similar desire of pleasure (Alpern, 1983). Friendships of pleasure have similar interest in which the other person's company can be optimal to the experience (Kaliartna, 2016).

Aristotle believed that this form of friendship still lacked wholesomeness as he described it as young in nature. Instead of a mirror complex where two people can see themselves in the other person, individuals of the relationship may describe the other person as their fulfilling half. The friendship is driven by emotion and desire rather than moral values and character improvement. For the duration of the friendship, the connection is warm and heartfelt, working



for its own sake. The issue arises when the function has served its time or when interests or lifestyles change. The relationship is unstable and inconsistent similarly to friendship of utility (Pangle, 2002). There are various levels of friendships of pleasure that depend on the individuals in the relationship, yet Aristotle believed such friendships lack characteristics of a truly virtuous friendship.

### **The Virtuous Friendship**

Virtuous friendships are considered the highest form of friendship directed by goodness and mutual concern. (Fortenbaugh, 1975; Kalliaranta, 2016). This type of relationship is the perfect friendship as it includes utility, pleasure, and more. Wishing well, reciprocal affection, and awareness are taken into a deeper level as friendship connections are wholesome and true (Fortenbaugh, 1975). Individuals will work to help the other person in the relationship because of true care and desire of the others well-being. Though pleasure and utility are present, pleasure or utility to helping the friend are not motivators in keeping the relationship. Actions are performed through wishing well for the other person and often help build character for both people (Kalliaranta, 2016). The friendship is mutual as the two individuals help one another throughout life.

This form of friendship is naturally pleasant and beneficial to individual growth and establishment of a *good life*. Virtuous friendships are beyond goodwill, as goodwill often lacks desire and intensity (Pangle, 2002). These friendships are contemplative and based on mutual admiration for each other's personal characteristics. (Maher, 2012; Kalliaranta, 2016). In a virtuous friendship, actions are noble and pleasurable as enjoyment comes from the shared appreciation of activities (Maher, 2012). The depth of the mutual relationship and time spent

together allows two people to truly understand each other's morals, characteristics, and values. Understanding leads to love and often admiration for one another.

Aristotle compared a virtuous friendship to a mirror where the friend is seen as another form of the self rather than “missing half” or a “missing link” described in friendship of pleasure (Bülow, 2016). Virtuous friends have the desire to share the most important experiences, thoughts, and feelings as friends' lives come together as one (Liu, 2009). Friends acknowledge personal characteristics and values not recognized in the other forms of friendships. The two often share common morals and values that can be discussed and re-evaluated through experiences and discussion. The expression of admiration and care lead to self-improvement and further understanding of good moral character (Bülow, 2016). Wishing well to one another takes the form of giving more than received and wishing greatness for the other person. In virtuous friendships, affection becomes a key factor to wishing well – a characteristic that the other forms of friendship lack.

## **Summary**

In Aristotle's theory of the good life, he analyzed how *philia* (friendship) is key to *eudaimonia* (human flourishing). Aristotle pointed out that reciprocal affection is needed to define a relationship as a friendship. This serves as a reminder that regardless of the type of friendship there are different bonds that are made (Dunbar, 2018). Without friendships, life is not only considered unworthy but has negative influences on both physical and mental health. True happiness is considered unachievable and self-growth is ineffective without friendships (Bülow & Felix, 2016; Dunbar, 2018).

Every friendship differs and is important in terms of personal growth, but according to Aristotle, lesser friendships do not last long if the function becomes absent. Both friendship of

utility and pleasure have levels within themselves distinguishable by traits of the individuals in the relationship, however, they lack traits of virtuous friendships (Alpern, 1983). Virtuous friendships differ greatly from friendship of utility and friendship of pleasure due to the intensity and richness of goodwill, affection, and overall self-awareness. Pangle (2002), suggest that Aristotle viewed love in virtuous friendship to be an expansion of self-love. Aristotle believed that without friendships, self-exploration and growth is unachievable.

When Aristotle wrote the *Nichomachean ethics* and defined friendship of utility, friendship of pleasure, and virtuous friendships, he composed the definition based on Greek society and their valued ethics (Irwin, 1999). In defining human happiness, good person qualities, and friendship, he did not take into consideration the Internet and the World Wide Web (WWW) - much less virtual worlds. Though much of his philosophy corresponds with our society today, his definition of friendship could not have anticipated virtual worlds much less virtual relationships.

### **The Virtual World**

Virtual worlds are ongoing virtual environments in which players simultaneously interact (Chesney et al., 2014). As players interact in these virtual worlds, a generated computer display provides users the sense of being physically present in an environment other than the one they are in. As players interact with the virtual world, they affect the game's overall environment, therefore affecting the gameplay of others (Schroeder, 2008). Online virtual worlds include activities where players collaborate and form teams to accomplish gaming tasks. Some games may include forming "guilds" or guild-like teams to organize events, decorate assets, or overcome goals. To maximize the play experience, players may decide to collaborate using the communication tools provided (Du et al., 2021). According to Bell (2008), the five elements of

synchrony, persistence, avatars, the network of people, and computer facilitation, constitute the definition of virtual worlds. The five characteristics distinguish virtual world-based games from other online social games and their players creating a unique form of socialization.

### **Synchrony and Persistence**

The avatar-like structures of games such as *Minecraft* and *Habbo* establish synchronous communication in virtual worlds. Movements and avatar designs allow synchronic movement and improve online social cueing and communication (Du et al., 2021). Players coexist in the spaces or terrain provided by developers in acknowledgment that their actions in the game affect the entity of the virtual world. The persistence of time in these virtual worlds allows comparison to real-world interactions as players become a dynamic part of the world's community and economy. Unlike other virtual games or chat rooms, users experience a synchronous sense of space and common time (Bell, 2008). Synchrony is essential in allowing players to work together and accomplish tasks. Without a team working together in common time, some game tasks would be nonexistent or impossible to complete.

Users contribute to the environment of the virtual world when logged on, but the virtual game continues to exist even when the user logs off. Virtual worlds cannot be paused and constantly change, even once the player has stopped playing. Players log in simultaneously and experience the virtual world as they come online. As defined, when a user logs in again, the world or game is not the same as when they left (Schroeder, 2008). This constant change occurs not only through player influence but by software updates and in-game events provided by developers. Comparing the virtual world experience to real-world change and events becomes realistic with synchrony and persistence.

## **Avatars and Network of People**

Avatars are an attempt to re-create the self when players dive into a social, virtual world. They are a graphical or textual representation of the player in real time. Avatars represent players virtually through physical features and tend to make movements a human would. Behaviors and mimicry in the dynamic of virtual worlds can be compared further to synchrony in face-to-face interactions when players interact using avatars. These animated behaviors support social interaction in virtual worlds, distinguishing these games from other computer games (Chesney et al., 2014). The purpose of these avatars is not only to create a version of the player themselves but also to give players more accurate social cues of the social situation. Such social cues ensure a level of realism in virtual worlds absent from other games. Avatar movements and environmental context are robust in the social reality of virtual worlds. Social interactions become realistic as avatars can emote and move as the player would in the real world (Pedicca & Vilhjálmsón, 2008). Unique avatars enhance self-expression, increasing the realness of virtual worlds. The ability of the avatar to emote, move, and change allows the player to represent themselves further to create connections and enjoy the virtual world with others (Chesney et al., 2014; Schroeder, 2008).

Bell (2008) refers to the social aspect of virtual worlds as a network of people. In this definition, the people are the core of virtual worlds as players interact with each other and the environment. Each player's action impacts the virtual environment, affecting the ecosystem of the virtual game. If a user decided to log in to a virtual world and not socially interact with anyone, they would still be interacting with the virtual environment; therefore, affecting the virtual world they are in and the players they may or may not interact with (Bell, 2008; Cole & Griffiths, 2007). Guilds, short-term groups, partners, and individual players impact the

environment and ecosystem of virtual worlds. The entirety of the online world and community can be compared to an ecosystem where a participant's actions affect part of a more extensive system. One user's ideas, influences, and in-game discoveries affect the curiosity and creative ideas of others. A ripple effect occurs when a player or a group of players act or behave in the virtual environment (Bell, 2008; Chesney et al., 2014). A virtual world would be nothing more than empty data without player interaction.

### **Avatar Synchrony**

Synchrony in the real world refers to mimicking and matching behaviors or movements during social interactions. Interpersonal synchronization has a prosocial effect, increasing sociality in different relationships (Hu et al., 2022). The virtual environment of virtual worlds focuses on players being together and having a sense of being present in the environment. Avatars take human form as developers work to re-create human movement. Virtual world interactions and the ability to mimic and match behavior become similar to synchronous interactions in the real world.

In real life, synchrony happens in different forms; two people may sit together and align limb movements, match gestures when talking to one another, or clap in unity at a concert. The most prevalent form of synchrony in virtual worlds is interpersonal synchrony. Interpersonal synchrony occurs when identical or similar behaviors occur at the same time or when an opposing movement occurs. For example, when a couple walks, they may place the same foot forward at the same time or the opposite foot forward at the same time (Hu et al., 2022). In virtual worlds, avatars can make several hand gestures, walk, jump, and even dance together. A game designer's goal is to make synchrony as accurate as possible, almost as if the user were entering a new world and body rather than just using an animated figure (Chesney, 2014; Kou &

Gui, 2014). For several reasons, avatars play a significant role in portraying the social realism of a virtual world.

The user's presence through avatars further adds to the realism of the virtual world (Chesney, 2014). Not only do games focus on the quality of player interaction but also the sensory experience of the different interactions. Synchrony is one of the most significant differences between virtual worlds, online games, and virtual reality. Online games revolve around accumulating points or reaching a certain level, and virtual reality no longer relies on facilitated computers or a computer screen (Bell, 2008; Schroeder, 2008). Virtual world games tend to focus on the player experience and expression as well as interaction. The synchrony and persistence of virtual worlds strive for players to experience a sense of reality and presence, where socializing is a crucial factor. Players are able to interact world-wide with an understanding of how the virtual world in which they are playing works.

### **Facilitated by Computers**

The different characteristics of the virtual world can be true of many role-playing games and video game software, but what further defines these worlds are their facilitation of network computers. A managed game, such as *Dungeons and Dragons*, includes avatars, a network of people, and synchronous activities; however, unlike virtual worlds, network computers do not facilitate data and communication (Bell, 2008). A networked computer spatially distributes data and information to achieve goals successfully. This process involves different computers gathering and sending information via the Internet (Baillieul & Antsaklis, 2007). These computers can be compared to neurons and neural pathways in the brain as networked devices manage, direct, and regulate the behavior of connected devices (Gupta & Chow, 2008). These networked systems indefinitely store all environments, objects, and interactions within a virtual

world. The complexity of these computers keeps track of data and allows for national and geographical communication and interactions to occur instantly. Networked computers allow for the ever-changing environment that defines virtual worlds (Bell, 2008). As social interaction expands, the virtual world becomes more lifelike than other social games.

## **Summary**

Virtual Worlds are unique in the context of socialization and realization. Players are allowed to interact with the environment and other players across the globe. The interactions and activities of players affect the entirety of virtual environments. By allowing users to collaborate and communicate, game enjoyment is enhanced, and different social relationships begin to form (Du et al., 2021). Player's battle, build, cook, and even fish together as the avatar takes a human form. Users in virtual worlds can create close positive social bonds as they form teams or guilds to accomplish tasks or participate in different activities (Chesney et al., 2014; Cole & Griffiths, 2007). People worldwide come together daily, interact, and spend time together. The five essential elements of virtual worlds allow interactions to become as close to real life as possible. Through avatars and the complexity of facilitated networked computers, players can experience synchrony in real-time. The socialization aspect of these worlds allows for different relationships, interactions, and relationships to form. Online friendships begin to form and grow through the uniqueness and complexity of virtual worlds.

## **Aristotle & Virtual Friendships**

Since Aristotle wrote the *Nichomachean Ethics* in 340 BCE, he could not take into consideration modern technology when he defined friendships (Pangle, 2002). Aristotle did not discuss restrictions of human relationships or clarify whether online or virtual friendships would meet the criteria for his definitions. Today, philosophers and researchers argue whether the



criterion Aristotle has put forth allows for comparing virtual and traditional friendships.

Philosophers continue to contemplate whether virtual relationships could indeed be virtuous or lack the concept of friendship altogether.

### **Defining Virtual Friendships**

Virtual Friends are friendships that occur over the internet that would not otherwise exist due to geographical or social restraints (Bülow, 2016). Due to the persistent and live environment, avatars, and gameplay in virtual worlds, users are motivated to create relationships with different users. People share and participate in different activities that allow for the structuring and maintenance of friendships. Virtual friendships are primarily different from traditional friendships since they do not involve face-to-face interaction between the two individuals (Domahidi et al., 2014). Virtual friends are strangers who meet in a virtual world, have found common interests and goals, and often enjoy each other's company. Some players may log in to virtual worlds to play with friends from the real world, but they are no longer considered virtual friendships. Different features, such as chats and virtual goods, allow users to interact with one another (Chen et al., 2015). When considering virtual relationships, there is a lack of research and understanding of their true value.

### **Do Virtual Friendships meet the Aristotelian criteria?**

Philosophers argue that virtual friendships are "unreal," whereas others refer to them as one of the least valuable friendships. Like social networking sites, virtual worlds allow people to be exclusive with whom they come in contact with and what parts of their lives they share with others. Individuals in these friendships are often unaware of their lack of knowledge about details of the other person's life, this lack of knowledge makes genuine and true friendship difficult to obtain (Bülow, 2016). The moral value of virtual connections has come to debate

between social researchers, psychologists, and philosophers. Professionals question whether virtually sustained friendships can ever reach the level of virtuous friendships (Kaliarnta, 2016). Some philosophers consider online friendships poor substitutes for traditional friendships due to a lack of realism, sincerity, and truthfulness.

Aristotle proposed that friendships come with responsibilities and awareness, including pleasure and reciprocal affection (Liu, 2010; Munn, 2012). If online relations generate pleasure, reciprocal affection, and responsibilities, virtual worlds should be able to generate genuine friendships. Studies have found that online games and virtual worlds increase bonds with individuals who already know one another. These studies indicate positive social interaction in virtual worlds such as *League of Legends*, *Worlds of Warcraft*, *Maple Story*, and *Second Life* (Cole & Griffiths, 2007). If traditional friendships are strengthened through virtual world gameplay, there is no doubt that new relationships will arise. In fact, new virtual friendships are easier to obtain for people due to the lack of obstacles and the absence of physical or geographical limitations. In virtual worlds, players are less likely to be judged by appearance, race, culture, height, weight, gender, or social-economic status. Online players are considered more alike and equal than they may be if they interact in real life. The anonymity is also believed to allow a greater self-expression than social media and real-world interactions (Bülow & Felix, 2014; Søraker, 2012). The simple nature of virtual worlds encourages communication via instant chats during gameplay. Different virtual worlds present new components that require communication and teamwork in gameplay.

Philosophers tend to agree that virtual friendships exhibit characteristics of Aristotelian friendships; however, some believe they fail to meet the criteria for virtuous friendships. The analysis of friendships tends to focus on self-disclosure, shared experiences, and personal/mutual

well-being. When Aristotle created the criteria and levels of friendship, he did not consider technology, much less the possibility of virtual friendships. Exploring these characteristics and the nature of virtual friendships will allow a better evaluation of how virtual friendships compare to traditional friendships.

### **Expressions of the Self**

Self-disclosure is an important part of intimate relationships as self-disclosure increases the experience of intimacy in interactions. Both romantic and non-romantic relationships depend on honest and vulnerable interaction when creating a genuine bond (Mckenna et al., 2002). Some argue that virtual friendships lack the honesty and openness needed to create a genuine and truly virtuous bond suggesting that individuals taking part in virtual interactions appear to be someone they are not. This deception is not always intentional; rather, the nature of the virtual world does not allow full disclosure of the self. (Bülow & Felix, 2016; Cockings & Matthews, 2000).

Virtual friendships lack authentic self-presentation due to the inability to see different social cues and experience a different number of situations. Virtual worlds may lack real-world risks, such as grief and humiliation, where the player cannot make unconditional commitments as players choose how they appear and act in virtual communities (Søraker, 2012). Just like in social media, players can determine what aspects of their lives or personality to share with others. Games usually allow for a multi-filtered form of communication rather than single-filtered communication. Single-filtered communication occurs when one person has direct contact with another's experience, diminishing the limitation of the other person's interpretation of an event. Multi-filtered communication is limited as person B receives information based on the other's interpretation of an event with fact or false information. Though connection and communication allow the establishment of friendships, arguably, this can also prevent a

friendship from becoming genuinely virtuous. Single-filtered communication is difficult to achieve in virtual worlds, impacting the ability to know a person's true character and moral values (Kaliartna, 2016). The single-filtered communication style of virtual worlds allows players to create new images of themselves solely constructed based on what they see fit. Whether the deception is intentional or unintentional does not change the impact of the falsified information and ungenuine connection.

Arguably, offline experiences also include direct and indirect non-genuine communication. Though social media makes it easier for individuals to deceive those with whom they interact, virtual worlds offer a longevity advantage where players see the different aspects of another's personality and how they have changed over time (Kaliartna, 2016). Some studies reveal that people may be more inclined to express their online identity without deception (Bülow & Felix, 2016). The absence of physical barriers can bring two individuals together that would never interact in the real world and may even encourage greater self-disclosure. Mckenna et al. (2002) found online interaction similar to the *stranger on a train* phenomenon. In this phenomenon, strangers on the train shared confidential information with seatmates due to their anonymity. No dyadic boundary could be violated as the seatmate had no relation to the stranger. In the same way, online users are likely more willing to contact strangers and express their genuine selves without worrying about their real-life identities (Chen et al., 2015). This effect or phenomenon can be true in virtual relationships, disclosing more personal aspects of the self with players living in different towns or countries. Forming unique connections can be simple due to spending hours on end together, yet anonymity remains when the other person does not have access to the real-life identity.

Research shows that self-disclosure and partner disclosure create a positive experience and increase a relationship's esteem and intimacy (Mckenna et al., 2002; Sprecher & Hendrick, 2004). Self-disclosure is a process where one individual shares their intimate feelings, values, and experiences. This process is not situational, as it is a voluntary process that may involve individual traits and personality characteristics (Sprecher & Hendrick, 2004). Bülow & Felix (2016) believe that players who do not risk humiliation do not necessarily lack self-disclosure. Fully disclosing factors such as social status, race, and disability do not influence virtual relationships; online friendships are more likely to be judged on merit and contribution to a team or virtual community (Bülow & Felix, 2016). In a related study, Sprecher and Hendrick (2004) found that self-disclosure did not predict relationship quality and stability. They found that self-expression must be combined with other constructs to strongly predict relationship value. Friendships should be deliberately dependent on the individuals in the relationship and their ability to self-disclose. An individual's ability to honestly express the self is important in relationships but is not a condition of friendships. Self-expression will become necessary at different times in a relationship (Söraker, 2012; Sprecher & Hendrick, 2004). If the expression of the self were the main component in evaluating friendship, virtual friendships are not necessarily inferior.

In contrast to social media, virtual world game players impact other players while interacting in the same environment. Players are often required to form teams or temporarily join a group of players. These interactions in the virtual world allow for the grief and humiliation described to make unconditional commitments. Not only are there positive experiences in virtual worlds but negative experiences also arise. Most virtual worlds have online freedoms that allow for the possibility of gossip, trolling, and cyberstalking. Players can mute and block deviant

players, but humiliation, bullying, and destruction of relationships or property can still occur (DuQuette, 2020). Grief and humiliation could transpire as the virtual world provides the flexibility of these freedoms.

In positive experiences such as building and exchanging ideas, players can recognize the creativity of one another, as well as their skills as builders, leaders, or planners. In team-based virtual worlds, players proactively influence their teammates and create positive or negative atmospheres for players (Kou & Gui, 2014). A player's reactions to winning or losing as well as teamwork abilities will come to light in guild-like structures and teams. These reactions reveal parts of the personality of other players creating opportunities to evaluate the true nature of other players. In contrast, the players' ability to self-disclose depends on the game's nature and the player's personality.

Voluntary and involuntary self-disclosure in virtual world friendships depends on how much time players and friends spend together, a characteristic of friendship that Aristotle valued.

### **Personal and Mutual Well-being**

Søraker (2012) recognizes the evasiveness in valuing a virtual friendship. When evaluating the value of a friendship, individuals are drawing the prudential value of a person. Each person has their perceptions of empathy, sympathy, and care, which evaluate the well-being they express for others (Curzer, 2007). Personal and mutual well-being depends on the player who chooses to interact with the other. The nature of virtual worlds may create obstacles in expressing and sharing well-being, but this does not mean it does not exist. The different types of friendships are achieved over time and in different ways (Søraker, 2012). In each and every way, virtuous friends should create a balance of mutual well-being and benefit (Irwin, 1999). Personal and mutual well-being then depends on the individual and the values they draw from the virtual

friendship. The depth and importance of a virtual friendship then depend on the two individuals in the relationship.

Søraker (2012) argues that the lack of experience and fewer opportunities to increase well-being may increase the value of virtual world friendships. If individuals do not have the opportunity to create a safe, valuable friendship elsewhere, virtual friendships should not be considered inferior. Not everyone has the opportunity to meet new people and engage in community activities. Happiness does not occur without social relationships; for some, virtual friendships will be the only viable means of that positive, happy experience.

Genuine admiration and love require honesty. For mutual well-being to occur, two individuals must know the truth about the other in order for the admiration of each other's traits to occur. In social communities and virtual worlds, players can be selective with whom they interact. They can decide when, how, and for how long they wish to communicate, whereas others only interact in certain situations (Fröding & Peterson, 2012). It is worth noting that parasocial relationships are likely to occur when a player feels a close connection to another player who does not feel the same way. In parasocial relationships, the relationship is one-sided and lacks a two-way connection. These relationships lack the mutual well-being needed in virtuous friendships, but regardless of the imbalance, the relationship is considered valuable to one person (Kowert & Emory Daniel, 2021).

## **Goodwill**

The *Nicomachean Ethics* proposes that friendships require goodwill for any relationship to form. The reciprocation of goodwill should be present as both parties should be aware of the mutual connection (Irwin, 1999). Goodwill does not involve an intensity or a desire as it happens

naturally (Curzer, 2007). Evaluating virtual friendships should depend on the individuals rather than the overall structure of where the friendship formed.

### **Shared Experiences**

With different forms of virtual worlds and the emerging popularity of virtual reality, people have debated the concept of the real world and virtual world experiences (Wang, 2020). Aristotle defined shared experience as the ability to enjoy and spend time together, as all friends will spend time together and enjoy each other's company (Irwin, 1999; Kiliarnta, 2016). Specifically, the shared experience should give two people positive engagement opportunities where they feel together. Spending time together is not based on individual preference of what, when, and where but rather the idea that the two individuals are together. Aristotle gave examples of hunting together or discussing philosophy, not a specifying a location to enjoy these activities. He explained that in virtuous friendships, friends would partake in activities they both enjoy or choose activities to enjoy each other's presence (Irwin, 1999). Virtual world players can facilitate different interactions through live events, adventurous quests, or other activities.

Virtual worlds allow for live interactions that other platforms lack. Not only are players experiencing live concerts and other social events together, but the virtual world has allowed individuals to explore and construct private clubs, groups, and communities (Bülow & Felix, 2016). Virtual worlds can bring people from all over the world together, changing learning, culture, and society (Levin & Mamlock, 2021). *Second Life* has allowed Aboriginal students in Canada to recreate their colonial past. Real-world buildings were used to recreate the community the students were familiar with (Cloutier, 2018). This is just one example of how virtual worlds allow for impactful real-world experiences. The virtual world environment continues to create a shared experience like never before.



Physical barriers such as physical impairments and distance do not exist in the virtual world. The different possibilities allow for a broader range of shared activities (Bülow & Felix, 2016). Individuals who would never interact create bonds and experience different things in virtual worlds. Players can easily visit each other's virtual homes, share ideas, make new friends, and work together. Building, decorating, and buying also enhance the social experience and create self-satisfaction (Chen et al., 2015). Overall, shared experiences deepen bonds, enhancing the knowledge of each other's personality and character (Kaliarnta, 2016).

People will only spend time with each other if they find each pleasant or enjoy doing the same things (Irwin, 1999). If virtual worlds lacked this ability, players would not consider meeting their virtual friends in real life (Bülow & Felix, 2016). The degree to which players spend time together impacts their online relationships. Hours spent playing virtual world games affect the intensity and importance of the shared experience in virtual friendships.

### **Present Study**

Social interaction through virtual worlds is becoming more common in the new digital age (Levin & Mamlock, 2021). Studying virtual world players and the friendships they created through their interactions and gameplay in virtual worlds provided insight into the social impact of online interactions. Though different studies examine empathy, social skills, gaming violence, and forms of communication of players who interact in virtual worlds, there is a lack of research focused on the value of virtual world friendships.

Philosophers and researchers have used the Aristotelian framework to conceptualize the interaction and value of virtual friendships. Although some argue that these virtual friendships are unreal, others suggest that virtual worlds allow for true interactions and friendships to be

made (Bülow & Felix, 2016). As our world becomes immersed in virtual reality and cyberspace, exploring virtual-world friendships and their value compared to traditional friendships is the beginning of understanding changes in socialization in the digital age.

The study aimed to understand virtual world friendship quality using the Aristotelian friendship framework of shared experiences, mutual well-being, and self-expression. Two separate surveys were distributed to evaluate friendship quality. Virtual-world gamers rated the quality of friendship of a virtual-world friend, and a separate survey was distributed for individuals to rate traditional friendships. In congruency with Aristotle's main characteristics of friendship relationship, Relationship quality was rated as participants answered questions about mutual care, well-being, and self-disclosure. Along with this, measures of maintenance difficulty, permanence, and exclusiveness, were included in determining relationship strength and value. Examining these characteristics provided answers to whether virtual world friendships were comparable to traditional friendships.

## **Hypotheses**

### **Hypotheses about Mutual Well-being**

1a: Traditional Friendships will indicate higher levels of ego support and self-affirmation compared to virtual world friendships.

1b: Traditional friendships will indicate a higher rating of mutual well-being and friendship permanence than virtual world friendships.

### **Hypotheses about Relationship Strength**

2a: Personalized interest will not differ between the two types of friendships.

2b: Duration of friendship will be related to differentiation scales (exclusiveness, permanence) and friendship maintenance (difficulty-personal, difficulty-situational).

2c: Satisfaction will not differ between the two types of friendships.

### **Hypotheses about Self-disclosure**

3a: Virtual world friendships will have a higher rating of self-disclosure than traditional friendships.

3b: The duration of the relationship will be positively related to self-disclosure between friends.

## **Methods**

### **Participants**

A random sample of 240 participants was obtained through midwestern university undergraduate classes ( $n = 89$ ) and Amazon Mechanical Turk (MTurk) ( $n = 151$ ) to assess the value of different characteristics of friendships. Of the original 240 participants, 17 surveys were considered invalid due to missing or invalid data, resulting in 223 completed surveys. A total of 121 traditional friendships and 102 virtual world friendship surveys were completed. There was no exclusion based on gender or ethnicity. Furthermore, individuals under 18 and above 65 were excluded to avoid sampling from protected populations. No specific population or gender was targeted, as each gender has been known to play virtual world games and make online friendships (Chan & Cheng, 2004).

The final sample consisted of 115 males (51.6%), 106 females (47.5%), and one participant that identified as non-binary (.04%) with a participant preferring not to disclose their gender (.04%). Ages ranged from 19 to 63 years old, with a mean age of 32.95 ( $SD = 9.26$ ). The sample reported was 73% Caucasian, 16% African American, and 11% other, including Hispanic/Latino and Asian. The mean length of friendship was 4.93 months ( $SD = 1.28$ ), ranging from 1 month to 42 years.

## **Procedure**

After obtaining IRB approval, questionnaires were distributed. Participants who chose to complete the survey were presented with recruiting scripts (see Appendix A), informed consent (see Appendix B), and a debriefing statement upon completion of the survey (see Appendix C). In addition to the contact information for the researcher and supervisor, a debriefing statement was also included with phone numbers and links to the National Domestic Violence Hotline and Love is Respect for information on healthy relationships and how to seek help. The virtual world and traditional friendship participants answered the Acquaintance Description Form – F2 (ADF-F2), the Self-Disclosure Index, and demographics/friendship Information questions. Those who participated via Amazon Mturk were offered monetary compensation of \$.50, and undergraduate students may have received extra credit per their professor. All APA ethical guidelines were followed for this study.

## **Measures**

Questions concerning friendship details (See Appendix K and Appendix L) were asked to understand relationship quality further. Participants were asked what virtual world game they played (or played), how long they have been playing virtual world games, how often they played this game with their targeted person, and how long they have known their friend. For the virtual game to be considered and for information to be valid for this study, the virtual world must have an ongoing virtual environment where players and their avatars interact simultaneously through chats provided by the game (Bell, 2008; Chesney et al., 2014). Participants may have used multiple platforms to communicate other than the virtual world they met. Virtual friendship participants were asked to specify which virtual world game they met their targeted person and what other means they used to communicate. Similarly, traditional friendship participants

specified where they met their targeted person and how often they were in face-to-face contact weekly.

### ***The Acquaintance Description Form – F2 (ADF-F2)***

Paul Wrights (1985), Acquaintance Description Form (ADF-F2) was used (See Table 1) to assess friendship quality, value, and the different characteristics of friendships within the Aristotelian friendship framework (For full measure, see Appendix G). The ADF-F2 is a 70-item scale with items rated on a Likert scale of 1-7, 1 = Never/Definitely Not, 4 = About Half the Time/Perhaps, and 7 = Always/Without Expectation/Definitely. Each of the five scales has several subscales with five questions; this includes 1) relationship strength (voluntary interdependence and person-qua-person), 2) relationship values (utility value, stimulation value, ego support value, self-affirmation, and security value), 3) measures of maintenance difficulty (personal and situational), 4) relationship differentiation (exclusiveness permanence, salience of emotional expression, and social regulation), and 5) response bias (general favorability). Ten items were reverse-scored, and four questions were modified to fit virtual world experiences.

The ADF-F2 measured ego support value, self-affirmation, maintenance difficulty, permanence, mutual well-being, personalized interests, and friendship satisfaction. Sample questions included "T.P. can come up with thoughts and ideas that give me new and different things to think about" and "T.P. treats me in ways that encourage me to be my true self." The scale has a Cronbach Alpha range of .62 - .95 and test-retest reliability ranging from .78 - .97 (Wright, 1985).

Specifically for this study, Cronbach Alpha ranged from .25 - .89. Friendship permanence Cronbach Alpha was the lowest with a .25. However, two separate questions were used to rate relationship permanence. Salience of emotional expression also had a low Cronbach Alpha score

of .50. However, emotional expression was further assessed with self-disclosure questions. The rest of the scales ranged from .70 - .89, indicating appropriate internal consistency. The sum of the ADF-F2 determined overall friendship quality. Mutual well-being, ego support, self-affirmation, personalized interest, relationship differentiation, and maintenance difficulty were all be measured using the ADF-F2. It is worthy of noting that measures of tension are also known as maintenance difficulty in the ADF-F2 as names will be used interchangeably to describe results.

### ***Self-Disclosure***

The self-disclosure scale assessed individuals' tendency to disclose information in their friendship (See Appendix H). Miller et al., (1983) 10-item self-disclosure was used with a Likert Scale of 1-5, 1 = Strongly Disagree, 3 = Neutral/Neither Agree or Disagree, and 5 = Strongly Agree. The scale has a Cronbach Alpha range of .86 - .93; however, for this study, the Cronbach Alpha was .89. The sum of responses to these questions determined the total score for self-disclosure.

### ***Satisfaction***

Participants rated friendship satisfaction using a Likert scale of 1-6, 1 = Not at all Satisfied, 2 = Slightly Satisfied, 3 = Neutral, 4 = Slightly Satisfied, 5 = Satisfied, and 6 = Extremely Satisfied. Participants were asked to rate their satisfaction with a single item stating, "Please rate relationship satisfaction with your T.P. on a Scale of 1-6" (See Appendix I).

### ***Permanency***

Although the ADF-F2 has a permeance scale that was used for overall friendship quality, two permanency questions were added to measure friendship permanence (See Appendix J). All participants were required to disclose how long they have known their targeted person/friend and

indicate friendships permanence by answering, "How likely is it that your friendship is permanent?" and "How likely is it that you and TP will still be friends in 6 months?" using a Likert scale of 1-5, 1 = Very Unlikely, 3 = Uncertain, and 5 = Very Likely. Specifically for this study, the scale has a Cronbach Alpha of .73.

## **Results**

### **Data Screening**

The data were screened using the explore function of SPSS. For variables with random missing data, average scores were inserted. A total of 17 surveys were removed due to incomplete surveys or surveys with a large number of missing information. Skewness, kurtosis, and normal distribution for the maintenance difficulty, personalized interest, and duration of friendship results were outside acceptable limits. Log transformations used to correct skewness and kurtosis were successful. Skewness, kurtosis, and normal distribution for satisfaction and differentiation scales were also outside acceptable limits, however, the log transformation was unable to correct skewness and kurtosis. Data for satisfaction and differentiation scales were used as-is. All outliers were found to be in the acceptable range.

### **Virtual World Friendships**

Virtual world players reported having played virtual world games for an average of 4.83 months (ranging from 3 months to 25 years;  $SD = 52.22$ ). When asked if they felt more comfortable sharing information with people from the virtual world than in real life, 87 (85.29%) indicated yes, and 15 (14.7%) indicated no. Of the 85% who indicated feeling more comfortable online, 70% rated comfortable (4) on while 18% rated very comfortable on a Likert scale of 1-5, 1 = much less comfortable, 3 = about the same, and 5 = very comfortable. Second life was the most reported virtual world game, where 73 (71.56%) of participants met their targeted person.

When asked if they played other virtual games with indicated targeted person, 40% of the 35 reported playing other virtual world games. When asked participants if they communicated with their targeted person outside of the virtual world game, 90% confirmed they communicated via platforms such as Instagram, Facebook, Snapchat, or Discord.

### **Hypotheses about Mutual Well-being**

Independent sample *t*-tests (see Table 2) were conducted to assess differences in friendship types for hypothesis 1a (Traditional Friendships will indicate higher levels of ego support and self-affirmation compared to virtual world friendships.) Two separate *t*-tests were conducted: one for levels of ego support and another for self-affirmation. For the differences in friendship type and ego support, the assumption of homogeneity of variance was assessed by Levene's test,  $F = .02, p = .88$ . This indicated no significant violation of the equal variance assumption. Reported levels of ego support for traditional friendships ( $M = 28.96, SD = 4.47$ ) were significantly higher than the sum score of ego support for virtual world friendships ( $M = 26.72, SD = 4.67$ ),  $t(221) = -3.65, p < .001$ . The effect size for the analysis ( $d = .49$ ) was found to be modest.

For the differences in friendship type and self-affirmation, the assumption of homogeneity of variance was assessed by Levene's test,  $F = 2.86, p = .09$ . This indicated no significant violation of the equal variance assumption. Results found significant differences between self-affirmation for traditional friendship ( $M = 28.88, SD = 4.58$ ) and the sum score of the self-affirmation for virtual world friendship ( $M = 26.76, SD = 5.39$ ),  $t(221) = -3.13, p < .001$ , equal variances not assumed. The effect size for the analysis ( $d = .43$ ) was found to be modest.

Independent sample *t*-tests (see Table 2) were conducted to assess differences in friendship types for hypothesis 1b (Traditional friendships will indicate a higher rating of mutual



well-being and friendship permanence than virtual world friendships). Two separate *t*-tests were conducted, one for mutual well-being and another for friendship permanence. For mutual well-being and the differences in friendship type, the assumption of homogeneity of variance was assessed by Levene's test,  $F = 1.53, p = .22$ . This indicated no significant violation of the equal variance assumption. Significant differences were found between friendship types, as mutual well-being for traditional friendship ( $M = 208.40, SD = 26.85$ ) was higher than the sum score for mutual well-being for virtual world friendship ( $M = 191.51, SD = 30.79$ ),  $t(221) = -4.38, p < .001$ . The effect size for the analysis ( $d = .58$ ) indicates a moderate effect size.

For friendship permanence and the differences in friendship type, the assumption of homogeneity of variance was assessed by Levene's test,  $F = 1.08, p = .30$ . This indicated no significant violation of the equal variance assumption. Results indicated significant differences between friendship types as friendship permanence for traditional friendship ( $M = 8.21, SD = 1.67$ ) were higher than the mean score for friendship permanence for virtual world friendship ( $M = 7.51, SD = 1.42$ ),  $t(221) = -3.37, p < .001$ . The effect size for the analysis ( $d = .45$ ) indicates a modest effect size. These results supported the hypothesis.

### **Hypotheses about Relationship Strength**

Independent sample *t*-tests (see Table 2) were conducted to assess differences in friendship types for hypothesis 2a (Personalized interest will not differ between the two types of friendships). For personalized interest and the differences in friendship type, the assumption of homogeneity of variance was assessed by Levene's test,  $F = .09, p = .76$ . This indicated no significant violation of the equal variance assumption. The sum scores of personalized interests for the traditional friendship ( $M = 3.22, SD = .21$ ) were not significantly different than the sum

of scores from virtual world friendship group ( $M = 3.09$ ,  $SD = .21$ ),  $t(221) = -4.60$ ,  $p = .76$  These results supported the hypothesis.

Two separate bivariate correlations were performed to assess hypothesis 2b on how differentiation scales (exclusiveness, permanence) and measures of tension/relationship maintenance (maintenance difficulty-personal, maintenance difficulty -situational) was related to friendship duration in months. This was done to understand better how the length of a friendship (in months) would impact exclusiveness and permanence in friendships, as well as measures of tension/relationship maintenance. Relationship differentiation was a sum of scores from questions for exclusiveness and permanence from the ADF-F2 scales.

A bivariate correlation was performed to evaluate hypothesis 2b on how relationship differentiation scales ( $M = 36.72$ ,  $SD = 10.25$ ) were related to friendship duration in months ( $M = 3.41$ ,  $SD = 1.28$ ). Duration of friendship was positively related to relationship differentiation,  $r(221) = .06$ ,  $p = .40$ . The duration of friendship was not significantly related to differentiation scales of exclusiveness and permanence.

A bivariate correlation was performed to evaluate hypothesis 2b on how maintenance difficulty scales ( $M = 3.53$ ,  $SD = .46$ ) were related to friendship duration in months ( $M = 3.41$ ,  $SD = 1.28$ ). Duration of friendship indicated a significant negative related to reported maintenance difficulty ( $r(221) = -.27$ ,  $p < .01$ ). The results showed that the duration of friendship was significant in relation to maintenance, meaning that the longer the friendship, the easier it was to maintain. These results support the tested hypothesis.

Independent sample t-tests (see Table 2) were conducted to assess differences in friendship types for hypothesis 2c (Satisfaction will not differ between the two types of friendships.) For satisfaction and the differences in friendship type, the assumption of

homogeneity of variance was assessed by Levene's test,  $F = 3.90$ ,  $p = .049$ . This indicated a violation of the equal variance assumption. Satisfaction differed significantly between the groups as the sum score of satisfaction for traditional friendship ( $M = 5.26$ ,  $S.D. = .76$ ) was higher than the mean satisfaction for the virtual world friendships group ( $M = 4.80$ ,  $SD = 1.07$ ),  $t(177.6) = -3.57$ ,  $p < .001$ , equal variances not assumed. The effect size for the analysis ( $d = .49$ ) was found to be moderate.

### **Hypotheses about Self-disclosure**

Independent sample t-tests (see Table 2) were conducted to assess differences in friendship types for hypothesis 3a (Virtual world friendships will have a higher rating of self-disclosure than traditional friendships.) For self-disclosure and the differences in friendship type, the assumption of homogeneity of variance was assessed by Levene's test,  $F = 1.14$ ,  $p = .29$ . This indicated no significant violation of the equal variance assumption. Self-disclosure differs significantly between the groups as the sum score of self-disclosure for the traditional friendship group ( $M = 41.98$ ,  $SD = 6.26$ ) was significantly higher than the mean self-disclosure for the virtual world friendships group ( $M = 37.72$ ,  $SD = 7.44$ ),  $t(221) = -4.65$ ,  $p < .001$ . The effect size for the analysis ( $d = .63$ ) was found to be moderate as traditional friendships reported higher scores of self-disclosures.

A bivariate correlation was performed to evaluate hypothesis 3b on how relationship self-disclosure ( $M = 40.03$ ,  $SD = 7.13$ ) was related to friendship duration in months ( $M = 3.41$ ,  $SD = 1.28$ ). Duration of friendship was positively related to reported self-disclosure ( $r(223) = .35$ ,  $p < .01$ ). The results showed that the duration of friendship had a significant positive relation to self-disclosure indicating that the longer the friendship, the more friends disclosed to each other. These results support the tested hypothesis.

## Exploratory Analysis

Independent sample *t*-tests were conducted to assess the differences in length of friendship (in months) with targeted persons between friendship types. The assumption of homogeneity of variance was assessed by Levene's test,  $F = .17, p = .68$ . This indicated no significant a violation of the equal variance assumption. The sum length of friendship for the traditional friendship ( $M = 2.86, SD = 1.15$ ) was not found to be significantly greater than the sum score for virtual world friendship group ( $M = 3.86, SD = 1.21$ ),  $t(147) = -4.58, p < .001$ , equal variances not assumed. These results would indicate that both types of friendships had a similar reported time of being friends with their targeted person.

## Discussion

The results of this study support some of the hypotheses. Compared to virtual world friendships, traditional friendships indicate higher levels of ego support, self-affirmation, mutual well-being, friendship permanence, self-disclosure, and satisfaction; however, personalized interest did not differ between the friendship types. The duration of the relationship was positively related to self-disclosure between friends but negatively related to maintenance difficulty/measures of tension. Results indicated that the longer the friendships, disclosure increased, and the easier friendships were to maintain. The duration of friendship was not found to be significantly related to relationship differentiation scales of exclusiveness and permanence meaning that the length of friendship did not significantly impact the exclusiveness and permanence of a friendship.

Findings suggests that traditional friendships have higher Aristotelian qualities than virtual world friendships. Though the virtual world creates relationships and connections, traditional friendships exhibit a higher value of Aristotelian qualities. First, hypotheses 1a and 1b

were supported as traditional friendship reported higher scores of ego support, self-affirmation, mutual well-being, and friendship permanence. Findings confirmed that traditional friendships display significantly higher personal and mutual well-being characteristics. As Aristotle described, Mutual well-being includes having mutual admiration for each other while respecting and understanding individual morals, values, and characteristics (Maher, 2012; Kaliarnta, 2016). Per his beliefs, mutual well-being fosters the ability to self-disclose and nurture a deeper understanding of each other suggesting that the lack there-of impacts the ability for virtual world friendships to create virtuous relationships (Fröding & Peterson, 2012).

Duration of friendship was also related to friendship differentiation scales, maintenance scales, and self-disclosure. As the length of friendship increased, it became easier to maintain. This idea coincides with Aristotle's definition of virtuous friendships and the importance of spending time together to get to know one another truly. As the length of friendship increases, mutual well-being and unconditional commitments cannot be established without two people must have enough time to know each other's character and develop trust and honesty (Bülow & Felix, 2014; Søraker, 2012). This shows that spending time together makes communicating in and maintaining friendships easier.

Personalized interest did not differ between friendship types as both considered their relationship unique with personalized concern and interest. This would suggest that even though a virtual world friendship may lack certain qualities of a virtuous friendship, they hold the same value to the individuals in the relationship. Søraker (2012) would agree with the importance of considering an individual's definition and concept of friendship. He believed virtual friends are more accessible due to the lack of obstacles and physical limitations, with the issue being what parts of the self the individual was portraying online rather than genuine care for each other.

Satisfaction and self-disclosure differed between friendship types, as traditional friendships reported higher ratings compared to virtual friendships. These findings did not support hypotheses 2c and 3a, demonstrating that traditional friendships have deeper conversations and a more satisfying relationship. Although previous research suggests that some people are more comfortable expressing their true selves online, self-disclosure was not found to rate higher in virtual friendships (McKenna et al., 2002). A study by Cole and Griffiths (2007) found that players felt more comfortable in the virtual world as they were not judged by their appearance, gender, or other characteristics. Over half of the participants who completed the virtual world survey reported feeling more comfortable sharing information with people they met in the virtual world versus traditional friends. Such findings suggest that although players may feel more comfortable disclosing online, whatever is being disclosed may not lead to conversations that would foster deeper relationships (Søraker, 2012.).

Overall, the findings of this research suggests that spending hours on end together and completing virtual world tasks together does not create the friendship Aristotle described as virtuous. Despite findings that traditional friendships do not spend more time together than virtual world friendships, traditional friendships indicated higher levels of ego support, mutual well-being, self-affirmation, permanence, satisfaction, and self-disclosure. Even though virtual world friends show the same amount of personalized interest as traditional friendships and spend more time together completing tasks and enjoying each other's company, there still needs to be more depth in discussion for mutual well-being to exist.

Personalized interest and care did not differ between friendship types. This would suggest that virtual friendship connections are developed differently than in traditional friendship. Søraker (2012) explains the foundations of this relationship as trust in virtual worlds may be

harder to earn due to distrust or caution are usually the default. Such trust is earned with considerable time spent online, and even then, the connection is single-filtered, impacting the ability to know a person's true character and moral values (Kaliartna, 2016). Research findings conclude that traditional friendships, compared to virtual friendships, hold more value to individuals as they create deeper connections. By Aristotle's definition, this study would conclude that traditional friendships hold a higher value to individuals even when genuine care and concern were found to be similar for friendship types.

Virtual world friendships have qualities Aristotle defined but cannot replace traditional friendships. Coinciding with Aristotle's idea that friendships are a requirement of a good life, researchers agree that friendships affect individuals' physical and mental health. As the world becomes more immersed in the digital age, this study suggests the importance of maintaining real-world, traditional friendships, as physical and mental health can plummet without them. Aristotle also firmly believed that friendships must be made to achieve happiness (Irwin, 1999). Although virtual worlds may decrease social anxiety and increase self-disclosure, traditional friendships create more genuine friendships as recognized by the true self, not the idealized version (Dechant et al., 2020; Søraker, 2002).

The results present the idea of using virtual world games and environments to enhance traditional friendships, as positive interactions occur in virtual worlds. In terms of therapy, virtual worlds could be used to serve as a platform to practice social skills, help individuals with social anxiety, or improve relationships.

Communicating in a virtual world requires more verbal interaction than physical. Engaging in the virtual world can be the first step to overcoming uneasiness for an individual with social anxiety. Virtual worlds serve as a means in which the client learns to understand

anxious triggers and starts practicing socializing with different individuals. As a client engages in these virtual worlds, clinicians could benefit from observation and acquire more insight into what social anxiety looks like for their client. Virtual worlds can foster behavior observations challenging to obtain for outpatient clinicians including observing social skills that a client has but fails to reproduce in real life. Practicing expressing feelings while in the virtual world might benefit couples and families in need of practicing communication skills. Therapy may include accomplishing tasks online to improve planning and increase understanding of thought processes. Interacting socially in a virtual world can help clients and families better understand one another's communication styles and improve communication failure. Individuals with intellectual and developmental disorders may find virtual world games a safe place to practice different skills and improve social communication.

In a society immersed in technology, not only adults, but also children and adolescents spend more time online and on virtual worlds. Engaging in these games with peers across the world not only teach cultural difference in terms of beliefs but in communication as well. Players are also learning to accommodate and change their online strategy to tasks according to other players they engage with. These skills practiced on virtual games can transfer into the real world as they work with others at school, extracurricular activities, and at home. Virtual world games can also serve to spend time with traditional friendships where they explore a virtual continent across the world or have genuine or silly conversation, they would not otherwise have at school due to fear of peers listening to the conversation. Players and friends may find it easier to disclose thoughts and express their feelings on virtual worlds. Virtual world games could also be used in play therapy as children apply their knowledge and understanding of the world on virtual worlds. Clients can express themselves and show others, specifically the therapist, who they are



and who they want to be. Virtual Worlds have features that allow a sand play therapy session to be virtual or improve the therapeutic alliance between child and therapist.

Virtual worlds can also allow individuals to engage in different situations and create new positive memories. Just as Canadian students were able to recreate and explore their aboriginal past, individuals can experience scenes unreachable due to time or lack of resources. Players can recreate spending time at a beach or explore a virtual recreation the Amazon rainforest. This creates unique experiences and memories, and virtual worlds can offer an educational experience that cannot be found in textbooks. The possibilities are endless as the imagination of the user controls virtual worlds.

Results suggest that virtual friendships are no replacement for traditional friendships. If clients presented their only friends to be from virtual world games, it would be worth exploring their psychosocial well-being and relationship beliefs. The type of virtual world game and their relationships with other players should be considered. In regard to this, virtual world friendships should not be considered substitutes for traditional friendships and should not be included in safety plans. It would be questionable to consider virtual world friends' appropriate social supports and possible protective factors as they rated lower friendship qualities in this study.

## **Limitations**

In considering these findings and conclusions, it should be noted that this study has limitations. First, this study was cross-sectional. As technological advances are made, the defining characteristics of a virtual world may change, increasing social capabilities and easier access to technology. The definition of virtual worlds could be more precise, as there is no agreeable definition. Though there are common characteristics, each virtual world game is unique in what it allows its players to do (Bell, 2008). Players are offered different tasks and

different ways to express themselves through avatars. A participant who met their targeted person on *Second Life*, a particularly social virtual world, would have a different experience than someone who met their targeted person on *Minecraft*. No two worlds are identical. It would also be essential to consider the participant's individual experiences and the value of friendship. As Søraker (2012) argues, an individual's experience or lack thereof affects the value of friendship.

Second, the sample needed to be more representative, as it only consisted of individuals accessing the survey via Amazon MTurk or their university. Ethnicity raises questions about the general population and how they define and engage in friendships. Most participants were Caucasian and represented mainly by a U.S. population of 52.5% males. Internet or virtual world game usage may be used for different social purposes than other cultures and countries (Shen & Williams, 2011). A more representative sample would allow for a wide range of understanding of friendship and the importance of virtual worlds. For some players, virtual worlds could be a means of recreation, while for others, it may be an outlet for positive socialization and interaction (Søraker, 2012).

Another limitation is that all the items relied on self-report ratings and participants were asked to only rate for a single friend. Recommendations include longitudinal research, a more representative sampling, and qualitative studies to expand understanding of friendship types, definitions, and experiences. Individuals who have met a virtual world friend in real life should also be researched to determine further the effects virtual worlds have on friendships. As previous research discusses, understanding the player as an individual and understanding personal definitions of friendships would be essential to understanding the value of virtual world friendships (Chen et al., 2006; Munn, 2011; Søraker, 2012). A longitudinal study will help better

understand the development of virtual world friendships over time as these games change and the idea of a virtual world enhances.

For this study the Acquaintance Description Form-F2 indicated low reliability estimates for friendship permanence and salience of emotional expression. Different questions on the survey were used to better understand friendship permanence and emotion expression. Though the new scales had better reliability, it may benefit to explore not only different friendship scales but different characteristics of friendships.

## **Conclusion**

This study further revealed essential characteristics of friendship quality in the virtual world and traditional friendships following Aristotle's definition of friendship. The characteristics of mutual well-being, self-expression, and shared experiences are essential in both friendships. If virtual friendships and traditional friendships are being compared using the Aristotelian definition, this study confirms virtual world friendships could amount to becoming virtuous friendships but still need to reach the depth that traditional friendships have. Aristotle highlighted the importance of spending time together, and previous research has confirmed that virtual world games enhance friendships initiated in the traditional world (Kaliarnta, 2016). Research on friendships and what we know about virtual worlds reveals that virtual worlds can serve as positive social environments, but meeting someone on a virtual world game and only interacting via the virtual game is not enough.

Of the virtual world participants, 90% reported communicating with their virtual friends outside the virtual world and spending an average of 6 hours ( $SD = 1.13$ ) on virtual world games per week with their targeted person. In comparison, traditional friendships only spent about 4

hours ( $SD = 3.41$ ) with their targeted person per week. Even though traditional friendships spend less time together weekly, they showed significant results in several friendship characteristics.

The characteristic of self-disclosure should be further explored as traditional friendships showed significantly higher levels of self-disclosure; however, there were no differences in personalized interests and concerns. Of the 102 virtual world participants, 85% reported feeling more comfortable sharing with people from virtual worlds than in real life. These statistics should be further explored to better understand virtual world socialization and friendships.

In conclusion, the results of this study show that the virtual world can foster relationships but cannot replace traditional friendships or face-to-face interactions.

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**Table 1**

*ADF-F2 Scales and Subscale Definitions*

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**1. Relationship Strength**

Voluntary Dependence (VID): The degree to which the subject commits free or otherwise uncommitted time to interaction with her/his Target Person (TP) apart from pressures or constraints external to the relationship itself.

Person-qua Person (PQP): The degree to which the subject responds to his/her TP with a personalized interest and concern, i.e., as unique, genuine, and irreplaceable in the relationship.

**2. Relationship Values (Interpersonal Rewards)**

Utility Value (UV): The degree to which the subject regards her/his TP as willing to use her/his time, abilities, and resources to help the subject meet needs or reach personal goals.

Stimulation Value (SV): The degree to which the subject regards his/her TP as interesting, stimulating and, in general, capable of fostering an expansion in the subject's knowledge, perspectives, or repertoire of favored activities.

Ego Support Value (ESV): The degree to which the subject regards her/his TP as encouraging, reassuring and, in general, behaving in ways that help the subject maintain an impression of her/himself as a competent, worthwhile person.

Self-Affirmation Value (SAV): The degree to which the subject regards his/her TP as behaving in ways that facilitate the recognition and expression of the subject's more important and highly valued self attributes.

Security Value (SecV): The degree to which the subject regards her/his TP as safe and non-threatening due to a disinclination to behave in ways that would betray trust or draw attention to the subject's points of weakness or self-doubt.

### **3. Tension/Strain (Maintenance Difficulty)**

Maintenance Difficulty-Personal (MD-P): The degree to which the subject finds his/her relationship with TP frustrating, inconvenient, or unpleasant due to one or more of TP's habits, mannerisms, or personal characteristics.

Maintenance Difficulty-Situational (MD-S): The degree to which the subject finds her/his relationship with TP frustrating, inconvenient, or unpleasant due to factors that are circumstantial or impersonal.

### **4. Relationship Differentiation Scales**

Exclusiveness (EXCL): The degree to which the subject regards his/her relationship with TP as strictly dyadic by expecting and claiming proprietary access to specified forms of interaction and mutually involving activities.

Permanence (PERM): The degree to which the subject regards her/his relationship with TP to be either difficult or inappropriate to dissolve in spite of changing circumstances and, in effect, as permanently binding.

Salience of Emotional Expression (EMEX): The degree to which the subject regards overt expressions of positive affect (such as liking, affection, and personal appreciation) an essential aspect of his/her relationship with TP.

Social Regulation (SoRg): The degree to which the subject regards specified forms of interaction in his/her relationship with TP to be influenced by social norms and the expectations of relevant other persons.

## **5. A Measure of Response Bias**

General Favorability (GF): The degree to which the subject responds to her/his TP in a globally positive or negative way. A non-substantive scale used as a correction factor for selected purposes.

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**Table 2***Friendship Characteristics in Virtual Friendships and Traditional Friendships M (SD)*

|                         | <u>Virtual Friendships</u> | <u>Traditional Friendships</u> |
|-------------------------|----------------------------|--------------------------------|
| Ego Support**           | 28.96 (4.67)               | 26.72 (4.47)                   |
| Self-Affirmation**      | 28.88 (4.58)               | 26.76 (5.39)                   |
| Mutual Well-being**     | 208.40 (26.85)             | 191.51 (30.79)                 |
| Friendship Permanence** | 8.21 (1.67)                | 7.51 (1.42)                    |
| Personalized Interest   | 3.22 (.21)                 | 3.09 (.21)                     |
| Satisfaction**          | 5.26 (.76)                 | 4.80 (1.07)                    |
| Self-Disclosure**       | 37.72 (7.44)               | 41.98 (6.26)                   |

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*\*p<.05, \*\*p<.01*

## Appendix A

### Recruitment for Undergraduate Participants

“Understanding the value of friendships: Exploring the different characteristics of virtual friendships compared to real life friendships.”

Hello,

My name is Samantha Baires and I am a graduate student in the Psychology Department at Fort Hays State University. I would like to extend an invitation for you to participate in this study. The purpose of my research is to explore relationship characteristics between virtual world friendships and real-world friendships. If you choose to participate, you may click on the links below to be directed to the online survey.

The questions on the survey are related to friendship quality and intimacy. The questions will pertain to relationship strength and value between you and a friend of choice. Your professor may also be offering extra credit or course credit for your participation. I would appreciate your help with this research project. The survey link will direct you to an informed consent document that includes more information about the study. Contact information for the researcher is included on the informed consent. Should questions arise at any time before, during, or after completing the study, please do not hesitate to email me and/or my faculty supervisor, Dr. Janett Naylor-Tincknell.

The friendship study asks questions regarding the relationship of you and someone you consider a friend that you have met in the real world; not through social media or virtual means. To complete this survey, click the following link:

[https://fhsucahss.col.qualtrics.com/jfe/form/SV\\_1Nx85mquetqiTHg](https://fhsucahss.col.qualtrics.com/jfe/form/SV_1Nx85mquetqiTHg)

The virtual-world friendship survey asks questions regarding the relationship of you and friend you have met while engaging in virtual worlds. To complete this survey, click on the following link:

[https://fhsucahss.col.qualtrics.com/jfe/form/SV\\_9LDwkWKsTNKzRgG](https://fhsucahss.col.qualtrics.com/jfe/form/SV_9LDwkWKsTNKzRgG)

Thank you,

**Samantha Baires**

(scbaires@mail.fhsu.edu)

Faculty Supervisor

**Dr. Janett Naylor-Tincknell**

(jmnaylor@fhsu.edu)

## **Appendix B**

### **Informed Consent for Undergraduate Participants**

#### **CONSENT TO PARTICIPATE IN RESEARCH**

*Department of Psychology, Fort Hays State University*

**Study Title:** “Understanding the value of friendships: Exploring the different characteristics of virtual friendships compared to real life friendships”

**Name of Researcher:** Samantha Baires

**Contact Information:** scbaires@mail.fhsu.edu

**Name of Faculty Supervisor & Contact Information:** Dr. Janett Naylor-Tincknell  
(jmnaylor@fhsu.edu)

**You are being asked to participate in a research study. It is your choice whether to participate or not.**

#### **What is the purpose of this study?**

The present study aims to better understand virtual friendship quality using the Aristotelian friendship framework of shared experiences, mutual wellbeing, and true self-expression. The researchers will examine whether virtual world friendship and real-life friendships have similar qualities and value. The data gathered from this survey will serve as data for a master’s thesis.

#### **What does this study involve?**

This study will involve partaking on an online survey which will be provided to voluntary participants. The survey should take no more than 30 minutes to complete.

#### **Are there any benefits from participating in this study?**

Individuals will have the opportunity to reflect on their relationship with either a real-life friend or a virtual friend of choice.

#### **Will you be paid or receive anything to participate in this study?**

No monetary compensation will be given out for participating in the study. However, instructors may give out extra and/or course credit points for completion of the survey.

#### **What about the costs of this study?**



There are no anticipated major costs to partaking in the study, aside from spending a trivial amount of time to complete the survey.

### **What are the risks involved with being enrolled in this study?**

There are no anticipated major risks for partaking in the study. It should be noted that participants are free to withdraw from the study at any time should they need to. There are no anticipated major risks for partaking in the study. It should be noted that participants are free to withdraw from the study at any time should they need to. Additionally, contact information for the researcher, the faculty sponsor, the National Domestic Violence Helpline, and love is respect will be included at the end of the study.

### **How will your privacy be protected?**

All data collected from the survey will be anonymous. There is no need to denote name or any other personal information in the survey. Only the researcher and the faculty sponsors will have access to the anonymous data.

### **Other important items you should know:**

- **Withdrawal from the study:** Participation in the study is completely voluntary. As such, participants are free to drop out of the study at any time should they feel the need to. There is no penalty for dropping out of the study.
- **Alternative options:** Participants wanting to participate in the study but cannot access the survey should speak to their instructor about participation, especially if the concern is for extra credit in class. Alternative methods will be available for students who may not want to participate in the study.

### **Whom should you contact with questions about this study?**

Participants with questions regarding any aspect of the study can speak to the faculty advisor, Dr. Janett Naylor-Tincknell by email at (jmnaylor@fhsu.edu). Additionally, any questions can also be sent to the email address of the researcher: Samantha Baires (scbaires@mail.fhsu.edu).

### **CONSENT**

I have read the above information about this study, and I agree to participate in this study. I understand that I can change my mind and withdraw my consent at any time. By continuing, I understand that I am not giving up any legal rights and I am between the ages of 18 and 65.

## Appendix C

### Recruitment for Amazon Mechanical Turk Participants

“Understanding the value of friendships: Exploring the different characteristics of virtual friendships compared to real life friendships”

Hello,

My name is Samantha Baires and I am a graduate student in the Psychology Department at Fort Hays State University. I would like to extend an invitation for you to participate in this study. The purpose of my research is to explore relationship characteristics between virtual world friendships and real-world friendships. If you choose to participate, you may click on the following link to be directed to the online survey: INSERT LINK HERE

The questions on the survey are related to friendship quality and intimacy. The questions will pertain to relationship strength and value between you and a friend of choice. You will also earn \$0.50 for completion of the survey. I would appreciate your help on my research. The survey link will direct you to an informed consent document that includes more information about the study. Contact information for the researcher is included on the informed consent. Should questions arise at any time before, during, or after completing the study, please do not hesitate to email me and/or my faculty supervisor, Dr. Janett Naylor-Tincknell.

Thank you,

**Samantha Baires**

(scbaires@mail.fhsu.edu)

Faculty Supervisor

**Dr. Janett Naylor-Tincknell**

(jmnaylor@fhsu.edu)

## **Appendix D**

### **Informed Consent for Amazon Mechanical Turk Participants**

#### **CONSENT TO PARTICIPATE IN RESEARCH**

*Department of Psychology, Fort Hays State University*

**Study Title:** “Understanding the value of friendships: Exploring the different characteristics of virtual friendships compared to real life friendships”

**Name of Researcher:** Samantha Baires

**Contact Information:** scbaires@mail.fhsu.edu

**Name of Faculty Supervisor & Contact Information:** Dr. Janett Naylor-Tincknell  
(jmnaylor@fhsu.edu)

**You are being asked to participate in a research study. It is your choice whether or not to participate.**

#### **What is the purpose of this study?**

The present study aims to better understand virtual friendship quality using the Aristotelian friendship framework of shared experiences, mutual wellbeing, and true self-expression. The researchers will examine whether virtual world friendship and real-world friendships have similar qualities and value.

#### **What does this study involve?**

This study will involve an online survey which will be provided to voluntary participants. The survey should take no more than 30 minutes to complete.

#### **Are there any benefits from participating in this study?**

Individuals will have the opportunity to reflect on their relationship with either a real-life friend or a virtual friend of choice.

#### **Will you be paid or receive anything to participate in this study?**

Participants will receive \$0.50 for completion of the survey through Amazon’s Mechanical Turk.

**What about the costs of this study?**

There are no anticipated major costs to partaking in the study, aside from spending a trivial amount of time to complete the survey.

**What are the risks involved with being enrolled in this study?**

There are no anticipated major risks for partaking in the study. It should be noted that participants are free to withdraw from the study at any time should they need to. There are no anticipated major risks for partaking in the study. Additionally, contact information for the researcher, the faculty sponsor, the National Domestic Violence Helpline, and love is respect will be included at the end of the study.

**How will your privacy be protected?**

All data collected from the survey will be anonymous. There is no need to denote name or any other personal information in the survey. Only the researcher and the faculty sponsors will have access to the anonymous data.

**Other important items you should know:**

**Withdrawal from the study:** Participation in the study is completely voluntary. As such, participants are free to drop out of the study at any time should they feel the need to. There is no penalty for dropping out of the study.

**Whom should you contact with questions about this study?**

Participants with questions regarding any aspect of the study can speak to the faculty advisor, Dr. Janett Naylor-Tincknell by email at (jmnaylor@fhsu.edu). Additionally, any questions can also be sent to the email address of the researcher: Samantha Baires (scbaires@mail.fhsu.edu).

**CONSENT**

I have read the above information about this study, and I agree to participate in this study. I understand that I can change my mind and withdraw my consent at any time. By continuing, I understand that I am not giving up any legal rights and I am between the ages of 18 and 65.

## **Appendix E**

### **General Debriefing**

“Understanding the value of friendships: Exploring the different characteristics of virtual friendships compared to real life friendships”

#### **Debriefing Form**

You have just completed a study titled “Understanding the value of friendships: Exploring the different characteristics of virtual friendships compared to real life friendships”

The present study aims to better understand virtual friendship quality using the Aristotelian friendship framework of shared experiences, mutual wellbeing, and true self-expression. You were asked to fill out a survey with questions regarding your relationship with a virtual world friend of choice. The information provided will help researchers understand the different qualities between virtual world friendship and real-world friendships.

The researchers greatly appreciate your help with this project. If you feel distressed after your participation in this project or feel you are in an unhealthy relationship, you can contact the National Domestic Violence Hotline at (800) 799-7233 or love is respect at (866) 331-9474.

For more information about unhealthy and abusive relationships please visit National Domestic Violence Hotline at <https://www.thehotline.org/> or love is respect at <https://www.loveisrespect.org/>.

For more information about this research project, you can contact the researcher listed below. You may also contact the faculty supervisor of this project for any questions or comments.

Thank you,

**Samantha Baires**  
(scbaires@mail.fhsu.edu)

Faculty Supervisor  
**Dr. Janett Naylor-Tincknell**  
(jmnaylor@fhsu.edu)

## **Appendix F**

### **Letter of IRB Exempt Approval**

OFFICE OF SCHOLARSHIP AND SPONSORED PROJECTS

DATE: March 10, 2023

TO: Samantha Baires

FROM: Fort Hays State University IRB

STUDY TITLE: [1998850-1] “Understanding the value of friendships: Exploring the different characteristics of virtual friendships compared to real life friendships”

IRB REFERENCE #: 23-0076

SUBMISSION TYPE: New Project

ACTION: DETERMINATION OF EXEMPT STATUS

DECISION DATE:

REVIEW CATEGORY: Exemption category # 2

Thank you for your submission of New Project materials for this research study. The departmental human subjects research committee and/or the Fort Hays State University IRB/IRB Administrator has determined that this project is EXEMPT FROM IRB REVIEW according to federal regulations. Please note that any changes to this study may result in a change in exempt status. Any changes must be submitted to the IRB for review prior to implementation. In the event of a change, please follow the Instructions for Revisions at <http://www.fhsu.edu/academic/gradschl/irb/>. The IRB administrator should be notified of adverse events or circumstances that meet the definition of unanticipated problems involving risks to subjects. See <http://www.hhs.gov/ohrp/policy/AdvEvtGuid.htm>.

We will put a copy of this correspondence on file in our office. Exempt studies are not subject to

continuing review. If you have any questions, please contact Keith Bremer at [IRB@fhsu.edu](mailto:IRB@fhsu.edu).

Please include your project title and reference number in all correspondence with this committee.

## Appendix G

### The Acquaintance Description Form-F2

**The following lists 70 statements about your reactions to a friend called the Target Person (TP).** Each statement is followed by a scale ranging from 6 down to 0. Please decide which of the scale numbers best describes your reaction to that statement and record your answer. You will notice that some of the statements are best answered in terms of "how often" and some are best answered in terms of "how likely." This will not be confusing. Simply read the following codes carefully and use them as guides.

|                               |           |   |
|-------------------------------|-----------|---|
| 6 = Always; Without Exception | <b>or</b> | 6 = Definitely; No Doubt About It             |
| 5 = Almost Always             | <b>or</b> | 5 =Extremely Likely; Almost No Doubt About It |
| 4 = Usually                   | <b>or</b> | 4 = Probably                                  |
| 3 = About Half the Time       | <b>or</b> | 3 = Perhaps                                   |
| 2 = Seldom                    | <b>or</b> | 2 = Probably Not                              |
| 1 = Almost Never              | <b>or</b> | 1 = Extremely Unlikely                        |
| 0 = Never                     | <b>or</b> | 0 = Definitely Not                            |

NOTE: Please try to answer all items and be consistent with your Target Person (TP).

1. TP can come up with thoughts and ideas that give me new and different things to think about.
2. If I were short of supplies or other virtual world currency and needed it in a hurry, I could count on TP to be willing to loan it to me.
3. TP makes it easy for me to express my most important qualities in my everyday life.
4. Because I think of my relationship with TP as a "one and only" arrangement, I would consider it wrong to form the same type of relationship with anyone else unless TP and I had already decided to call it quits.
5. TP's ways of dealing with people make him/her rather difficult to get along with.
6. If I accomplish something that makes me look especially competent or skillful, I can count on TP to notice it and appreciate my ability.
7. TP is a genuinely likable person.
8. When I get together with TP, my emotional reactions are strong enough that I am definitely aware of them.
9. I can converse freely and comfortably with TP without worrying about being teased or criticized if I unthinkingly say something pointless, inappropriate, or just plain silly.



10. Because of the kind of relationship we have, most people would think it unnatural or improper if TP and I did not spend quite a bit of time together.
11. If I hadn't heard from TP for several days without knowing why, I would make it a point to contact him/her just for the sake of keeping in touch.
12. If TP were to move away or "disappear" for some reason, I would really miss the special kind of companionship (s)he provides.
13. If asked to guess how long my relationship with TP would last, I would say I consider myself committed to the relationship "till death do us part."
14. TP and I both have life situations that make our relationship convenient and easy to keep up.
15. When we get together to work on a task or project, TP can stimulate me to think of new ways to approach jobs and solve problems.
16. TP seems to really enjoy helping me out and doing favors for me.
17. TP is the kind of person who makes it easy for me to express my true thoughts and feelings.
18. Because my relationship with TP is not the kind that people ordinarily get jealous about, I would consider it perfectly all right if TP were to have the same basic type of relationship with another person or persons.
19. I can count on having to go out of my way to do things that will keep my relationship with TP from "falling apart."
20. If I am in an embarrassing situation, I can count on TP to do things that will make me feel as much at ease as possible.
21. If I were asked to list a few people that I thought represented the very best in "human nature," TP is one of the persons I would name.
22. When TP and I get together, we spend a certain amount of time talking about the good feelings and emotions that are associated with our relationship.
23. TP is the kind of person who likes to "put me down" or embarrass me with seemingly harmless little jokes or comments.
24. If I thought realistically about it, I would conclude that at least half the things TP and I do together are necessary because of people's expectations or other social pressures that have nothing to do with the really personal aspects of our relationship.
25. If TP and I could arrange our schedules so that we each had a free day, I would try to arrange my schedule so that I had the same free day as TP.

26. TP expresses so many personal qualities I like that I think of her/him as being "one of a kind," a truly unique person.
27. I consider my relationship with TP so permanent that if (s)he had to move to a city close to me for some reason, I would move to the same city to keep the relationship going.
28. Because of circumstances that neither TP nor I can do anything about, there is quite a bit of tension and strain in our relationship.
29. TP can get me involved in interesting new activities that I probably wouldn't consider if it weren't for him/her.
30. If I were short of time or faced with an emergency, I could count on TP to help make things as convenient for me as possible.
31. TP treats me in ways that encourage me to be my "true self."
32. Considering the kind of relationship we have, there are certain kinds of things that TP and I do together that I would consider inappropriate for either of us to do with anyone else.
33. I have to be very careful about what I say if I try to talk to TP about topics that (s)he considers controversial or touchy.
34. If I have some success or good fortune, I can count on TP to be happy and congratulatory about it.
35. TP has the kind of personal qualities that would make almost anyone respect and admire her/him if they got to know her/him well.
36. If I thought realistically about my relationship with TP, I would conclude that many other things are more important than its emotional aspects.
37. I feel free to reveal private or personal information about myself to TP because (s)he is not the kind of person who would use such information to my disadvantage.
38. Many of my acquaintances have such definite ideas about the responsibilities that go along with my relationship with TP that they would strongly disapprove if I did not live up to them.
39. If I had decided to a task or quest a certain day and discovered that TP was completing it for a day later, I would strongly consider waiting a day in order to task or quest with them.
40. "False sincerity" and "phoniness" are the kinds of terms that occur to me when I am trying think honestly about my relationship with TP.

41. If my relationship with TP became too dissatisfying to be worth the trouble, I could call it off or ease out of it with little difficulty.
42. Through no fault of our own, TP and I have to work hard to keep our relationship from falling apart.
43. When we discuss beliefs, attitudes and opinions, TP introduces viewpoints that help me see things in a new light.
44. TP is willing to spend time and energy to help me succeed at my own personal tasks and projects, even if (s)he is not directly involved.
45. TP understands the personal goals and ideals that are most important to me and encourages me to pursue them.
46. Because I regard my relationship with TP to be very exclusive, I would consider it wrong to carry on the same type of relationship with anyone else.
47. When we have a disagreement or misunderstanding, I can count on TP to listen to my side of the story in a patient and understanding way.
48. TP has a way of helping me "play up" my successes and not take my failures too seriously.
49. TP is a pleasant person to be around.
50. If I thought realistically about it, I would conclude that I spend very little time thinking about the emotions I most often experience in my relationship with TP.
51. When I am with TP, I feel free to "let my guard down" completely because (s)he avoids doing and saying things that might make me look inadequate or inferior.
52. The kinds of things TP and I do together are strongly influenced by definite social obligations that go along with the kind of relationship we have.
53. When I plan for leisure time activities, I make it a point to get in touch with TP to see if we can arrange to do things together.
54. When TP and I get together, I enjoy a special kind of companionship that I don't get from any of my other acquaintances.
55. If something happened so that my relationship with TP was no longer satisfying, I would keep on with it anyway for legal, moral or ethical reasons.
56. Because of outside complications than neither TP nor I can change, I come close to feeling that keeping up our relationship is more trouble than it is worth.

57. I can count on TP to be ready with really good suggestions when we are looking for some activity or project to engage in.
58. If I were sick or hurt, I could count on TP to do things that would make it easier to take.
59. Doing things with TP seems to bring out my more important traits and characteristics.
60. Because I regard my relationship with TP to be a "one and only" arrangement, I would be very disappointed if I found out that TP had developed the same basic type of relationship with anyone else.
61. I can count on communication with TP to break down when we try to discuss things that are touchy or controversial.
62. TP has a way of making me feel like a really worthwhile person, even when I do not seem to be very competent or skillful at my more important activities.
63. It is easy to think of favorable things to say about TP.
64. If I were to list the most important aspects of my relationship with TP, positive emotional experiences are among the things I would include.
65. TP is quick to point out anything that (s)he sees as a flaw in my character.
66. If I thought about it objectively, I would conclude that society has quite a few rules and regulations about the kind of relationship I have with TP.
67. I do things with TP that I may not be particularly interested in simply because I enjoy spending time with her/him.
68. TP is the kind of person I would miss very much if something happened to interfere with our acquaintanceship.
69. If I thought realistically about it, I would conclude that my relationship with TP could easily be dissolved if necessary.
70. Because our different roles and responsibilities create competition and conflict between us, TP and I experience quite a bit of strain in our relationship.

## Appendix H

### Self-Disclosure Scale

**Listed below are several statements that reflect different approaches to interpersonal communication. For each statement fill in the response on the answer sheet that indicates how much you agree or disagree with that statement as it applies to your own behavior.**

For each statement:

- 1 = Strongly disagree
- 2 = Moderately disagree
- 3 = Neutral- neither agree or disagree
- 4 = Moderately agree
- 5 = Strongly agree

I have talked about the following subjects with my targeted person about:

1. My personal habits.
2. Things I have done which I feel guilty about.
3. Things I wouldn't do in public.
4. My deepest feelings.
5. What I like and dislike about myself.
6. What is important to me in life.
7. What makes me the person I am.
8. My worst fears.
9. Things I have done which I am proud of.
10. My close relationships with other people

## **Appendix I**

### **Satisfaction Scale**

**Please rate relationship satisfaction with your TP on a Scale of 1-6.**

1= Not at all Satisfied

4 = Slightly Satisfied

2 = Slightly Satisfied

5 = Very Satisfied

3= Neutral

6= Extremely Satisfied

## **Appendix J**

### **Permanency Questionnaire**

**How likely is it that your friendship with TP is permanent?**

1 = Very Unlikely

4 = Likely

2 = Unlikely

5 = Very Likely

3 = Uncertain

**How likely is it that you and TP will still be friends in 6 months?**

1 = Very Unlikely

4 = Likely

2 = Unlikely

5 = Very Likely

3 = Uncertain

## Appendix K

### Virtual World Friendship Survey Questionnaire

What is your age?

What is your race/ethnicity? (Check all that apply).

- |                                 |   |
|---------------------------------|---|
| -White                          | - Asian, Hawaiian Native/other Pacific Islander |
| -Hispanic/Latinx/Spanish Origin | -Black/African American                         |
| -Other                          | - Prefer not to Say                             |

Which term best describes your gender identity?

- |                    |                             |
|--------------------|-----------------------------|
| -Woman             | -Non-binary or Gender Queer |
| -Man               | -Other                      |
| -Transgender woman | -Prefer not to say          |
| -Transgender man   |                             |

**How long have you been playing on virtual worlds?**

**Do you feel *more* comfortable sharing information with people you know from the Virtual World than to real life (non-'Net) acquaintances?**

Yes No

**If yes, how much more comfortable on a scale of 1-6**

- |                           |                      |
|---------------------------|----------------------|
| 1 = much less comfortable | 4 = comfortable      |
| 2 = less comfortable      | 5 = very comfortable |
| 3 = about the same        |                      |



Please determine a Virtual friendship relationship you would like to rate/answer questions for; they will be called targeted person (TP) throughout the rest of the survey. Please choose a TP you have never met in-person or real life.

**Gender Identity of the targeted person (Friend) that will be used through the survey.**

- |                    |                             |
|--------------------|-----------------------------|
| -Woman             | -Transgender man            |
| -Man               | -Non-binary or Gender Queer |
| -Transgender woman | -Prefer not to say          |

**What Virtual World site did you meet targeted person on (Ex. Second Life, World of Warcraft, Sansar, etc.)?**

**Are there other virtual world games you play together?**

**How long have you known targeted person?**

**How often are you online and interacting on a Virtual world with targeted person per week?**

**Have you communicated with TP outside the Virtual World? If yes, please indicate how or on what platform(s) (Ex. Facebook, Instagram, Discord, Twitch etc.)**

**Have you and your TP met face-to-face in real life?**

- |       |      |
|-------|------|
| - Yes | - No |
|-------|------|

## Appendix L

### Traditional Friendship Survey Questionnaire

What is your age?

What is your race/ethnicity? (Check all that apply).

- |                                 |   |
|---------------------------------|---|
| -White                          | - Asian, Hawaiian Native/other Pacific Islander |
| -Hispanic/Latinx/Spanish Origin | -Black/African American                         |
| -Other                          | - Prefer not to Say                             |

Which term best describes your gender identity?

- |                    |                             |
|--------------------|-----------------------------|
| -Woman             | -Non-binary or Gender Queer |
| -Man               | -Other                      |
| -Transgender woman | -Prefer not to say          |
| -Transgender man   |                             |

**Please determine a friendship relationship you would like to rate/answer questions for; Preferably you are closest to. They will be called targeted person (TP) throughout the rest of the survey.**

**Where did you meet your targeted person?**

**How long have you known targeted person?**

**How often do you physically see (have a face-to-face interaction with) targeted person per week?**

**Gender Identity of the targeted person (Friend) that will be used through the survey.**

- |        |                          |
|--------|--------------------------|
| -Woman | -Non-binary/third gender |
| -Man   | -Prefer not to say       |

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Thesis: of Virtual World Friendships compared to Real World Friendships

Author: Samantha Baires

Signature: 

Date: 7-31-23